

Q: Will I have to make changes to my vessel, operations, or watch schedule?

A: There are always some changes that can be made to reduce CEM risk factors. The program is about making a good-faith effort to reduce the occurrence of these risk factors, and the degree of change (proper use of light management, sound insulation, courtesy policies, etc.) will depend on the recommendations of each CEWG.

Q: Do I need a CEMS coach on each vessel?

A: No. The role of the coach is to provide consistent support for CEMS implementation. Having an onboard coach has been proven to be an effective method to provide onboard support for CEMS implementation. However, this may not be a practical approach for all companies. If having an onboard coach is not practical, a company should develop an effective alternative approach to providing onboard support for CEMS implementation as part of its safety management system. The Coast Guard stands ready to assist any individual companies or industry workgroups looking to develop acceptable alternatives. A company should have at least one trained coach to help initiate and oversee its CEMS implementation effort.

More FAQ's may be found at the CEMS Website listed below.



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Crew Endurance Management Goal:

To reduce the risk of maritime and personal accidents by addressing and reducing the occurrence of endurance-related risk factors.

CEMS is a cyclic process. These changes can't be made all at once, and they won't occur overnight. Strive to improve conditions with every cycle.



The solutions you come up with are flexible and unique to each vessel or operation. You can tailor your program based on type of operations, time, money, and people.

A Quick Example:

STEP 1. Members of the Crew Endurance Work Group (CEWG) are selected by the company; they are the vessel captain, first mate, deckhands, company operations manager, and safety manager.

STEP 2. The risk assessment determines that crew-members experience poor sleep quality five days per week. The CEWG finds that one reason for the poor sleep quality is the deck work being done around the sleeping quarters at 0600.

STEP 3. To fix this problem, the CEWG recommends several solutions. The most cost-effective solution is to create a Courtesy Policy, which states that workers should be quiet in the vicinity of the sleeping quarters from 0000-1200.

STEP 4. The courtesy policy is deployed. During the weekly coach's visit, he notices deckhands needle-gunning near the sleeping quarters. The coach reminds the deckhands of the policy.

STEP 5. The CEWG surveys the crew again, and finds that conditions have improved slightly, but there is still room for improvement. The CEWG goes **BACK TO STEP TWO** to revisit this item or look at other areas for improvement.

**United
States
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Crew Endurance Management: The System



Developed jointly by the USCG/AWO Safety Partnership

Frequently Asked Questions

Q: What is Crew Endurance?

A: The ability to maintain performance within safety limits while enduring job-related physical, psychological, and environmental challenges that degrade endurance.

Q: What is the Crew Endurance Management System (CEMS)?

A: A system for managing the risk factors in maritime work environments that can lead to human error and performance slumps.

Q: Why does my company need CEMS?

A: CEMS can help your workers feel more alert, and reduces the risk of fatigue-related accidents. The 24/7 nature of the maritime industry contains a host of stressors that affect your crew's endurance. CEMS will help you identify these risk factors, understand how they affect the endurance level of your crews, and then provide you with a system-wide approach for managing them.

Q: How long will it take to do CEMS?

A: Implementing CEMS does not happen overnight. The CEMS process is cyclic (see diagram) and should continue until endurance risk factors are reduced as much as realistically possible. In other words, there is no set amount of time and there is always room for improvement.

Q: What are the CEMS requirements?

A: CEMS is based on science, and our clinical research asserts that if you follow CEMS, you'll reduce the risk of an endurance-related accident. The two fundamental requirements of the system are to (1) follow the CEMS process, as shown in the diagram on the right, and (2) ensure an effective means of providing onboard support for your CEMS implementation effort, such as a coach.

Crew Endurance Management

The Crew Endurance Management System (CEMS) was developed to manage the endurance-related risk factors that can degrade human performance and lead to human error. The CEMS process has five steps, four of which are repeated in a cycle of continuous improvement:

I. Set up Crew Endurance Work Group (CEWG) consisting of personnel from all levels of the organization. Their job is to keep the company's CEMS efforts on course.

II. Analyze current situation.

Use the Crew Endurance Risk Factor Survey / Decision Support System to determine how and why the endurance levels of crewmembers are affected by your business and operations.

III. Develop a Crew Endurance Plan (CEP).

Based on the risk assessment results, the CEWG recommends ways to improve conditions. DON'T try to change everything at once — the CEMS process is cyclic. Focus on low-cost, high-return items first and make a good-faith effort to address each risk factor as much as possible. CEM plans should address all CEMS components (see center box), and be deployed in the order as listed.

CEMS components

1. Education
2. Environmental changes
3. Light management
4. Trained coaches
5. Schedule changes

IV. Implement Crew Endurance Plan.

This is where the system modifications recommended in Step III are completed. These might include physical changes to crew quarters, new onboard policies, and changes in watch schedules. This is also where coaches are called upon to help with the process and overcome obstacles.

V. Evaluate Results.

Crew Endurance Plans should be evaluated periodically to see if risk factors have decreased. Distribute the Crew Endurance Risk Factor Survey or use the Decision Support System to gauge your progress. Repeat the cycle for those areas that need attention.

